

In re Application of: HERZBERG
Serial No.: 10/511,859
Filed: October 18, 2004
Office Action Mailing Date: June 11, 2007

Examiner: FLORES
Group Art Unit: 2611
Attorney Docket: 37476

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 10 and 42 are objected to because of informalities. Claims 1-2, 8, 10, 33-39, and 43 stand rejected under 35 U.S.C. § 102. Claims 1-32, and 39-44 stand rejected under 35 U.S.C. § 103.

Claims 1-51 are present in this application. Claims 31, 32 and 35 are canceled herewith. Claims 1, 6, 10, 11, 20, 25-28, 30, 33, 36, 37, 39, 40, 42, and 44 are amended herewith. Claims 45-51 are new.

Amendments have been made to the specification, to correct an inadvertent error. The amendments have deleted the term "physical" from describing upper layers of the 7-layer OSI (Open System Interconnection) model, since upper layers of the 7-layer OSI model are not termed physical layers. Level 1, the lowest level of the OSI model, is termed a physical layer, while the upper layers are not. Thus, upper layers are now termed correctly.

No new matter has been added.

Applicant respectfully points out that a rejection of claim 10 under 35 U.S.C. § 103(a), made in section 15 of the Office Action, contradicts two other rejections of claim 10, made in the same Office Action. The two rejections are the Examiner's rejection of claim 10 under 35 U.S.C. § 102(b) made in section 4, and the Examiner's apparent rejection of claim 10 under 35 U.S.C. § 103(a), made in section 9, at the bottom of page 10 of the Office Action.

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In section 15, the Examiner states that the reference of Webster *fails to specifically disclose* that "wherein displaying information on the modem connection comprises matching by the processor, between effects in upper layers and noise levels on the connection at specific times".

In section 4, the Examiner states that the reference of Webster *further discloses* the limitation of "wherein displaying information on the modem connection comprises matching by the processor, between effects in upper layers and noise levels on the connection at specific times".

In section 9, the Examiner states that the reference of Webster *further discloses*, "wherein displaying information on the modem connection comprises matching by the processor, between effects in upper layers and noise levels on the connection at specific times".

Applicant submits that claim 10 was not properly rejected, therefore the Office Action should not have been final. The Applicant requested to clarify the Office Action by telephone conference, and was refused.

Independent claims 1, 28, and 30 have been amended to include "data and other signals".

The amendments and new dependent claims have been made in order to clarify and define what is transmitted on the communication link, thereby defining the term "information content", which is determined based, at least partly, on the data and other signals. The term definition of the term "information content" differentiates many of the rejected claims from the references cited against them.

The amendments are supported, *inter alia*, by the first full paragraph of the Background of the invention.

Dependent claims 6, 11, 20, 27, 39, 40, 42, and 44, have been amended to correct antecedent references to "data and other signals" in the claims.

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New claims 46-51 have been added to further define the term "information content" and further limit independent claims 1 and 28.

Applicant points out that Webster et al (US 5,425,052), which is cited by the Examiner against many of the claims, including claim 1, does not teach collecting, determining, or displaying "information content" in the sense defined above. Webster teaches collecting, determining, and displaying a waveform, such as can be seen on an oscilloscope. Information content carried by a modem comprises digital data in analog form, and displaying information on the modem connection responsive to the determined information content requires at least deciphering the information content into digital form. Applicant submits that claims rejected based on Webster teaching collecting, determining, or displaying "information content" in the sense defined above are allowable. Webster does not decode or display a signal in a way that shows the information content. While the claims dependent on claims rejected based on Webster are allowable at least by virtue of their parent claims, nonetheless, at least some of the dependent claims add further patentability over their parent claims.

Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by Webster et al (US 5,425,052). The Examiner states that Webster discloses a method of analyzing the performance of a modem connection, including determining, by a processor, an information content of one or more signals transmitted between the end modems, and including displaying information on the modem connection, responsive to the determined information content.

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of anticipation. As stated above, Applicant respectfully points out that Webster does not teach determining or displaying "information content" in the sense defined above.

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Claim 1 was also rejected under 35 U.S.C. § 102(b) as being anticipated by Imamura (US 5,768,312). The Examiner states that Imamura discloses a method of analyzing the performance of a modem connection, including determining, by a processor, an information content of one or more signals transmitted between the end modems, and including displaying information on the modem connection, responsive to the determined information content.

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of anticipation.

As stated above, Applicant respectfully points out that Imamura does not teach determining or displaying "information content" in the sense defined above.

Claim 1 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster et al (US 5,425,052). The Examiner states that Webster fails to explicitly disclose displaying information on the modem connection, responsive to the determined information content. However, the Examiner states that in another embodiment (figure 1), Webster discloses a signal monitoring device, such as an oscilloscope, coupled between user A and user B.

As stated above, Applicant respectfully points out that Webster does not teach determining or displaying "information content" in the sense defined above.

Applicant respectfully traverses the above rejections and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claims 2 and 3 are allowable at least by virtue of their parent, amended claim 1.

Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Van Den Brink et al (US Publication 2003/0174765). The Examiner states that Van Den Brink (see Fig. 1)

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discloses the line interface being placed at a specific place at a distance closer to one of the modems, and farther away from the other modem.

Claim 4 is allowable at least by virtue of its parent, amended claim 1. However, Applicant respectfully points out that Van Den Brink does not teach, in Fig. 1, neither a distance of one modem from a line interface relative to a distance of another modem from the line interface. While one modem may be closer to a line interface than another, as the Examiner states, Van Den Brink does not appear to have addressed the issue. The Examiner is kindly requested to show where in Van Den Brink there is discussion of the specific distance in the claim.

Applicant respectfully traverses the rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Van Den Brink et al. The Examiner states that Van Den Brink further discloses that wherein connecting the line interface to the communication line comprises connecting at a point at most two times closer to one of the modems than to the other modem.

Claim 5 is allowable at least by virtue of its parent, amended claim 1. However, Applicant respectfully points out that Van Den Brink does not teach, especially not in Fig. 1, connecting the line interface to the communication line comprises connecting at a point at most two times closer to one of the modems than to the other modem. Again, while one modem may be closer to a line interface than another, as the Examiner states, Van Den Brink does not appear to have addressed the issue. The Examiner is kindly requested to show where in Van Den Brink there is discussion of a distance of one modem from a line interface relative to a distance of another modem from the line interface.

Applicant respectfully traverses the rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

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Claim 6 is allowable at least by virtue of its parent, amended claim 1.

Claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey (US Patent 6,690,720). The Examiner states that the combination of Webster and Downey further discloses wherein displaying information on the modem connection comprises displaying the contents of one or more modem negotiation signals. (In Downey, see Fig. 1 & col. 1, lines 55-62 & col. 2 lines 10-19)

Claim 7 is allowable at least by virtue of its parent, amended claim 1. However, Applicant respectfully points out that Downey does not teach displaying the contents of one or more modem negotiation signals.

The Examiner is kindly requested to show where in Downey there is mention of displaying the contents of one or more modem negotiation signals.

Applicant respectfully traverses the rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 8 is allowable at least by virtue of its parent, amended claim 1.

Claim 9 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that the combination of Webster and Downey further discloses wherein providing information on noise levels on the connection comprises suggesting, by the processor, possible sources of the noise. (In Webster, see col. 2, lines 62-66, col. 6, line 65 – line 6. The changes in the wire gauge and bridging line, which are caused by noise on the line, causes the characteristic impedance of the line to be non-constant.)

Applicant respectfully points out that:

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(a) The reference in Webster should probably be changed to (col. 2, lines 62-66, col. 6, line 65 – *col.* 7, line 6) (emphasis added by Applicant), since the reference "col. 6, line 65 – line 6" appears incomplete, while the reference "col. 6, line 65 – col. 7, line 6" indeed refers to wire gauge and bridging.

(b) Applicant fails to understand how changing wire gauge and bridging relate to "suggesting, by the processor, possible sources of the noise". Webster's discussion of wire gauge and bridging explains a source of noise, but Webster's invention does not include "suggesting, by the processor, possible sources of the noise".

(c) Applicant fails to understand how Downey relates to "suggesting, by the processor, possible sources of the noise".

(d) Applicant requested a telephone interview with the Examiner in order to understand the rejection of claims 9 and 10, and the Examiner refused.

Claim 9 is allowable at least by virtue of its parents, claim 8 and amended claim 1. However, Applicant respectfully points out that neither Webster nor Downey teach suggesting, by the processor, possible sources of the noise.

The Examiner is kindly requested to show where in Webster or Downey there is mention of "suggesting, by the processor, possible sources of the noise".

Applicant respectfully traverses the rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 10 was objected to because of the following informality: Claim 10 recites a limitation, "matching", which is the Examiner states is not disclosed or suggested in the specifications.

Claim 10 has been amended to include "wherein displaying information on the modem connection comprises showing cross-references ~~matching by the processor,~~ between ..." The amendment is supported, *inter alia*, by the last full paragraph of page 2 in the specification.

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Claim 10 was rejected under 35 U.S.C. § 102(b) as being anticipated by Webster. The Examiner states that Webster further discloses the limitation of "wherein displaying information on the modem connection comprises matching by the processor, between effects in upper layers and noise levels on the connection at specific times" (In Webster, see col. 2, lines 62-66).

Claim 10 is allowable at least by virtue of its parents, claim 8 and amended claim 1. However, Applicant respectfully points out that Webster does not teach, neither in col. 2, lines 62-66, nor elsewhere, "matching by the processor, between effects in upper layers and noise levels on the connection at specific times".

The Examiner is kindly requested to show where in Webster there is mention of "matching by the processor, between effects in upper layers and noise levels on the connection at specific times".

Applicant respectfully traverses the rejection and submits that the Examiner has not made out a *prima facie* case of anticipation.

Claim 10 was also apparently rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster. A rejection of claim 10 is included at the bottom of page 10 of the Office communication, within item 9, which is a rejection of claims 1-2, 8, 39, and 43 under 35 U.S.C. § 103(a) as being unpatentable over Webster. The Examiner states that Webster further discloses, wherein displaying information on the modem connection comprises matching by the processor, between effects in upper layers and noise levels on the connection at specific times.

Claim 10 is allowable at least by virtue of its parents, claim 8 and amended claim 1. However, Applicant respectfully points out that Webster does not teach, neither in col. 2, lines 62-66, nor elsewhere, "matching by the processor, between effects in upper layers and noise levels on the connection at specific times".

The Examiner is kindly requested to show where in Webster there is mention of "matching by the processor, between effects in upper layers and noise levels on the connection at specific times".

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Applicant respectfully traverses the rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 10 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Zhang et al (US Patent 6,775,240). The Examiner states that the reference of Webster fails to specifically disclose that wherein displaying information on the modem connection comprises matching by the processor, between effects in upper layers and noise levels on the connection at specific times (emphasis added by Applicant). The Examiner states that, however, Zhang does disclose the above. The Examiner states that Zhang discloses a test analyzer that determines quality of service, such as Bearer Delay, Cell or Packet loss, Echo delay, and Echo amplitude, some of which are directed to the particular impairment that are characteristic of packet networks. Furthermore, the Examiner states that a network performance analyzer is capable of measuring parameters such as loss, noise, delay, and distortion of various types. One skilled in the art would know that these parameters are measured in order to compensate for the channel impairments. Therefore, the Examiner states that taking the combined skills of Webster and Zhang as a whole, it would have been obvious to one of ordinary skills in the art to have incorporated these features into the analyzer of Webster, as taught by Zhang, for the benefit of determining the quality of service.

Applicant points out that the above rejection, made in section 15 of the Office Action, contradicts the two rejections above, namely Examiner's 35 U.S.C. § 102(b) rejection made in section 4, and the apparent 35 U.S.C. § 103(a) rejection made in section 9, at the bottom of page 10 of the Office Action.

However, Applicant also disagrees with the Examiner, and respectfully points out that neither Webster nor Zhang mention effects in upper layers, or indeed make mention of any layer at all, of the layer model of communications.

Applicant respectfully traverses the rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

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Claim 10 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that the combination of Webster and Downey further discloses, wherein displaying information on the modem connection comprises displaying matching by the processor, between effects in upper layers and noise levels on the connection at specific times.

Applicant respectfully points out that:

(a) Applicant fails to comprehend how the reference to Webster, col. 2, lines 62-66, which refers to adjusting impedance, relates to “matching by the processor, between effects in upper layers and noise levels on the connection at specific times”, as claimed in claim 10 before the present amendment, nor how it relates to “showing cross-references between effects in upper layers and noise levels on the connection at specific times”, as claimed in currently amended claim 10.

(b) Applicant fails to understand how Downey relates to “showing cross-references between effects in upper layers and noise levels on the connection at specific times”.

(c) Applicant requested a telephone interview with the Examiner in order to understand the rejection of claims 9 and 10, and the Examiner refused.

Claim 10 is allowable at least by virtue of its parents, claim 8 and amended claim 1. However, Applicant also respectfully points out that neither Webster nor Downey teach “showing cross-references between effects in upper layers and noise levels on the connection at specific times”. The Examiner is kindly requested to show where in Webster or Downey there is mention of “showing cross-references between effects in upper layers and noise levels on the connection at specific times”.

Applicant respectfully traverses the rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

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Claim 11 has been amended to say "information on the symbol mapping used by the connection, ~~responsive to~~ based on the collected data and other signals".

Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that the combination of Webster and Downey further discloses determining, by the processor, information on the symbol mapping used by the connection, responsive to the collected signals (In Downey, see col. 2, lines 15-17. "Modem configuration data")

Claim 11 is allowable at least by virtue of its parent, amended claim 1. However, Applicant respectfully disagrees with the above rejection, pointing out that neither Webster nor Downey teach *determining*, by the processor, information on the symbol mapping used by the connection, *based on* the collected signals, and that Downey teaches *recording* modem configuration data. The modem configuration data, as taught by Downey, is data input into the modem as configuration data for a test, and not a determination of information on the symbol mapping used by the connection, based on the collected data and other signals.

The rejection to claim 11 under 35 U.S.C. §103(a) should therefore be withdrawn.

Claims 12-14 are allowable at least by virtue of their parent, amended claim 1.

Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that the combination of Webster and Downey further discloses injecting noise in a manner which does not substantially interfere with a different connection passing on the communication link. (In Downey, see col. 2, lines 39-41)

Claims 15 is allowable at least by virtue of its parents, claim 14 and amended claim 1. However, Applicant disagrees with the Examiner, and respectfully points out

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that Downey describes an impairment generator in col. 2, lines 39-41, but does not describe injecting noise in a manner which does not substantially interfere with a different connection passing on the communication link. Downey injects noise as noise impairments, teaching away from not substantially interfering.

The rejection to claim 15 under 35 U.S.C. § 103(a) should therefore be withdrawn.

Claims 16 and 17 are allowable at least by virtue of their parents, claim 14 and amended claim 1.

Claim 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that the combination of Webster and Downey further discloses that, wherein the injected noise does not interfere with voice frequency bands of the communication link. (In Downey, see col. 2, lines 39-41)

Claim 18 is allowable at least by virtue of its parents, claim 17, claim 14 and amended claim 1. However, Applicant disagrees with the Examiner, and respectfully points out that neither Webster nor Downey describe injected noise which does not interfere with voice frequency bands of the communication link. Especially, In Downey, see col. 2, lines 39-41 there is no reference to frequency bands. Neither Webster nor Downey refer to frequency bands at all. The Examiner is kindly requested to show where in Webster nor Downey there is mention of frequency bands.

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claims 19 and 20 are allowable at least by virtue of their parent, amended claim 1.

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Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Conklin et al (US Patent 5,991,881). The Examiner states that the combination of Webster and Conklin further discloses identifying changes comprises identifying a retrain. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61).

Claim 21 is allowable at least by virtue of its parents, amended claim 20, and amended claim 1. Applicant has read the reference of Conklin et al, and disagrees with the Examiner. Applicant respectfully points out that Conklin does not describe identifying a retrain in col. 4, lines 30-51 & col. 5, lines 46-61. Applicant has not found other reference to identifying a retrain in Conklin. The Examiner is kindly requested to show where in Conklin there is mention of identifying a retrain.

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 22 is allowable at least by virtue of its parents, amended claim 20, and amended claim 1.

Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Imamura, as applied to claim 1 above, and further in view of Zuranski et al (US 5,768,312). The Examiner states that the combination of Imamura and Zuranski further discloses identifying changes comprises identifying a bit swap. (In Zuranski, see col. 9, lines 13-20).

Applicant has read the reference of Zuranski, and disagrees with the Examiner. Applicant respectfully points out that Zuranski does not describe identifying a bit swap in col. 9, lines 13-20. Applicant respectfully points out that neither Imamura nor Zuranski teach identifying a bit swap. The Examiner is kindly requested to show where in Zuranski there is mention of identifying a bit swap.

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

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Claim 22 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Conklin et al (US Patent 5,991,881). The Examiner states that the combination of Webster and Conklin further discloses identifying changes comprises identifying a bit swap. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61).

Applicant has read the reference of Conklin, and disagrees with the Examiner. Applicant respectfully points out that Conklin does not describe identifying a bit swap in col. 4, lines 30-51 & col. 5, lines 46-61. Applicant respectfully points out that neither Webster nor Conklin teach identifying a bit swap. The Examiner is kindly requested to show where in Conklin there is mention of identifying a bit swap.

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 23 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Conklin et al (US Patent 5,991,881). The Examiner states that the combination of Webster and Conklin further discloses providing suggested causes of the changes comprises identifying, for at least one change, a noise that caused the change. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61).

Applicant has read the reference of Conklin, and disagrees with the Examiner. Applicant respectfully points out that Conklin does not teach "providing suggested causes of the changes comprises identifying, for at least one change, a noise that caused the change" in col. 4, lines 30-51 & col. 5, lines 46-61. Applicant respectfully points out that Conklin does not mention noise at all. The Examiner is kindly requested to show where in Conklin there is mention of "providing suggested causes of the changes comprises identifying, for at least one change, a noise that caused the change".

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Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 24 is allowable at least by virtue of its parent, amended claim 1.

Claim 25 was amended to include "data and other signals", in order to define the signals transmitted on the modem connection.

Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that the combination of Webster and Downey further discloses that, wherein displaying information on the determined characteristics comprises displaying a raw bit content of signals transmitted on the modem connection. (In Downey, see Fig. 1 & Col. 1, lines 55-62 & col. 2, lines 10-19).

Applicant has read the reference of Downey, and disagrees with the Examiner. Applicant respectfully points out that Downey does not teach "displaying a raw *bit* content of signals transmitted on the modem connection" (emphasis added) in Fig. 1 & Col. 1, lines 55-62 & col. 2, lines 10-19. Applicant respectfully points out that neither Webster nor Downey describe displaying a raw bit content of signals transmitted on the modem connection. Especially, Downey refers to data as data describing the test and the test results, as in the following examples: "line simulator configuration data, modem configuration data and test results"; "information such as line simulator configuration data, modem configuration data, the serial numbers of the devices that participated in the test"; and "The test results include various train statistics, such as, for example, whether the training session was successful, and if so, the achieved data rate." Downey does not refer to saving, therefore does not imply displaying, a raw bit content of signals transmitted on the modem connection.

The Examiner is kindly requested to show where in Conklin there is mention of "displaying a raw bit content of signals transmitted on the modem connection".

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Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 26 was amended to include "collecting modem negotiation signals", in order to further define the signals collected through the line interface.

Claim 26 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Conklin (See Figs. 1-3, 6 & col. 5, lines 5-7). The Examiner states that Conklin discloses a system for network surveillance and detection of attempted intrusions. The system is comprised of a network observation, intrusion detection, alert notification, evidence logging, and an incident analyzer/reporter.

Applicant respectfully points out that neither Webster nor Conklin teach "collecting modem negotiation signals". Webster collects analog signals, while Conklin does not mention modems at all.

The Examiner is kindly requested to show where in Webster or Conklin there is mention of modem negotiation signals.

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 27 is allowable at least by virtue of its parent, amended claim 1.

Claim 28 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that Webster and Downey discloses "a processor adapted to determine an information content of one or more signals passing on the modem connection, responsive to the collected signals" (In Webster, see Fig. 4 or 22 & col. 2, lines 26-51), and "a human interface adapted to provide information on the determined

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information content". (In Downey, see Fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19, & see col. 1, lines 26-38).

Applicant respectfully submits that Webster in Fig. 4 or 22 & col. 2, lines 26-51 does not disclose the language of amended claim 28: "a processor adapted to determine an information content of one or more data and other signals passing on the modem connection, responsive to the collected data and other signals".

Applicant respectfully points out that while Downey teaches recording *modem configuration data*, Downey does not teach *information content*. The modem configuration data, as taught by Downey, is data input into the modem as configuration data for a test, while "a human interface adapted to provide information on the determined information content" provides information on *information content* carried by the modem.

The rejection to claim 28 should therefore be withdrawn.

Claim 29 is allowable at least by virtue of its parent, claim 28.

Claim 30 was amended to include "data and other signals", in order to more clearly define what is carried on the xDSL modem connection, what is collected, and upon what the provided information is based. The limitations of claims 31 and 32 were also rolled into amended claim 30.

Amended claim 30 now comprises a limitation of "providing information on the operation of the modem connection, responsive to the collected data and other signals, by providing data passing on the connection."

Claim 30 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that the combination of Webster and Downey further discloses A method of monitoring an xDSL modem connection, comprising: connecting a line interface to a communication link carrying signals of an xDSL modem connection, between a pair

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of end modems separate from the line interface (In Downey, see Fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19 & col. 6 lines 7-10); collecting signals passing between the end modems on the communication link, through the line interface, by a performance analyzer, during a collection session in which signals are not injected by the performance analyzer onto the communication link (In Webster, see Fig. 4), except possibly noise adapted to cause a retrain, injected at specific times (In Downey, see Fig. 3 & col. 5, lines 1-22); and providing information on the modem connection, responsive to the collected signals. (In Webster, see Fig. 4 or 22 & col. 2, lines 26-51)

Claim 31 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that the combination of Webster and Downey further discloses that, wherein providing information on the modem connection comprises providing information on the operation of the connection. (In Downey, see col. 5, lines 12-16)

Claim 32 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that the combination of Webster and Downey further discloses that, wherein providing information on the operation of the modem connection comprises providing data passing on the connection. (In Downey, see Fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19)

Regarding currently amended claim 30, Applicant points out that neither Webster nor Downey teach "providing information on the operation of the modem connection, responsive to the collected data and other signals, by providing data passing on the connection." Neither Webster nor Downey teach "responsive to the collected data and other signals", and neither Webster nor Downey teach "providing data passing on the connection" (emphasis added).

The rejection to claim 30 should therefore be withdrawn.

Claims 31 and 32 have been cancelled without prejudice.

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Claim 33 has been amended to include the limitation of originally filed claim 35: "substantially without interfering with signals of a second frequency band" The amendment is supported, *inter alia*, by originally filed claim 35, and by the last full paragraph of the SUMMARY OF THE INVENTION on page 5 in the specification.

Claim 33 was rejected under 35 U.S.C. § 102(e) as being anticipated by Downey (US 6,690,720). The Examiner states that Downey discloses a method of forcing a retrain on a modem connection, comprising: determining at least one first frequency band to be disrupted (See Fig. 1: 22 & col. 5, lines 1-7 & claim 2); and connecting to a communication line carrying the modem connection, between two end modems, a circuit which disrupts transmission of signals on the at least one first frequency band. (See Fig. 1:22)

Applicant has read the reference of Downey, and states that Downey does not teach "a circuit which disrupts transmission of signals on the at least one first frequency band substantially without interfering with data and other signals of a second frequency band". Downey describes noise impairment without mentioning frequency of the noise impairment.

The above rejection to claim 33 should therefore be withdrawn.

Claim 34 was rejected under 35 U.S.C. § 102(e) as being anticipated by Downey. The Examiner states that Downey further discloses that, wherein determining the at least one first frequency band to be disrupted comprises determining a frequency band including a pilot tone frequency band of the modem connection. (See Fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19).

Claim 34 is allowable at least by virtue of its parent, amended claim 33. However, Applicant additionally disagrees with the Examiner. Downey does not teach "including a pilot tone frequency band of the modem connection" in Fig. 1 & col. 1, lines 55-62 & col. 2, lines 10-19. Applicant has read Downey, and has not found

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mention of "including a pilot tone frequency band of the modem connection". The Examiner is kindly requested to show where in Downey there is discussion of "including a pilot tone frequency band of the modem connection".

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of anticipation.

Claims 35 has been cancelled without prejudice.

Claim 36 has been amended to depend from amended claim 33. Claim 36 is allowable at least by virtue of its parent, amended claim 33.

Claim 37 has been amended to depend from amended claim 33.

Claim 37 was rejected under 35 U.S.C. § 102(e) as being anticipated by Downey. The Examiner states that Downey further discloses that, wherein connecting the disruption circuit comprises connecting a circuit which shorts the at least one first frequency band without shorting the second frequency band. (In Downey, see col. 2, lines 39-41. One skilled in the art would know that one way to inject noise is to short the line.)

Claim 37 is allowable at least by virtue of its parent, amended claim 33. However, Applicant respectfully points out that Downey does not describe a frequency band, and does not describe "connecting a circuit which shorts the at least one first frequency band without shorting the second frequency band". Downey does not teach frequency bands at all. . The Examiner is kindly requested to explain why one skilled in the art, which "would know that one way to inject noise is to short the line", would "shorts the at least one first frequency band without shorting the second frequency band".

The above rejection to claim 37 should therefore be withdrawn.

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Claim 38 is allowable at least by virtue of its parent, amended claim 33.

Claim 39 was rejected under 35 U.S.C. § 102(b) as being anticipated by Webster. The Examiner states that Webster further discloses, wherein determining the information content of the one or more signals comprises determining a bit content. (See Fig. 4 or 22 & col. 2, lines 26-51)

Claim 39 is allowable at least by virtue of its parent, amended claim 1. However, Applicant respectfully points out that Webster describes observing a data waveform. Webster is silent in Fig. 4 or 22 & col. 2, lines 26-51 about "determining a bit content", and, in fact, does not mention bits at all. The Examiner is kindly requested to show where in Webster there is mention of "determining a bit content".

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of anticipation.

Claim 39 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster. The Examiner states that Webster further discloses, wherein determining the information content on one or more signals comprises determining a bit content. (See Fig. 4 or 22 & col. 2, lines 26-51)

Claim 39 is allowable at least by virtue of its parent, amended claim 1. However, Applicant respectfully points out that Webster describes observing a data waveform. Webster is silent in Fig. 4 or 22 & col. 2, lines 26-51 about "determining a bit content", and, in fact, does not mention bits at all. The Examiner is kindly requested to show where in Webster there is mention of "determining a bit content".

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 40 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1 above, and further in view of Downey. The Examiner states that the combination of Webster and Downey further discloses that, comprising

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determining a stage of the modem connection, responsive to the collected signals. (In Webster, see col. 2, lines 26-42)

Claim 40 is allowable at least by virtue of its parent, amended claim 1. However, Applicant respectfully points out that neither Webster nor Downey teach determining a stage of the modem connection. Especially, Webster does not teach determining a stage of the modem connection in Webster, see col. 2, lines 26-42. Especially, Downey teaches recording data, as described above with reference to claim 25, and does not teach determining a stage of the modem connection. The Examiner is kindly requested to show where in Webster or Downey there is mention of "determining a stage of the modem connection, responsive to the collected signals".

Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 40 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Webster, as applied to claim 1, and further in view of Poletto et al (US 7,213,264). The Examiner states that the reference of Webster fails to specifically disclose "determining a stage of the modem connection, responsive to the collected signals". However, the Examiner states that Poletto, in Fig. 7 & col. 6, line 57 – col. 7, line 2, discloses a device used to collect statistical information on packets that are sent between the network and the data center and to determine from the collected information whether the data center is under a denial of service attack.

However, Applicant disagrees, and respectfully points out that Poletto teaches a device used to collect statistical information on packets, that is, information about a plurality of packets, over a period of time. Poletto does not, either in in Fig. 7 & col. 6, line 57 – col. 7, line 2, or elsewhere, teach determining a stage of the modem connection, which is a state of a single modem connection at a specific time. The Examiner is kindly requested to show where in Webster or Poletto there is mention of "determining a stage of the modem connection, responsive to the collected signals".

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Applicant respectfully traverses the above rejection and submits that the Examiner has not made out a *prima facie* case of obviousness.

Claim 41 is allowable at least by virtue of its parent, amended claim 1.

Claim 42 was objected to because of the following informality: the Examiner stated that it is not clear as to what the Applicant is contemplating with the limitation: "without relation to the collection of signals to the line interface".

Claim 42 has been amended to include "at least some of the signals collected through the line interface are generated by at least one of the pair of end modems ~~without relation to the collection of the signals to the line interface~~ sending acknowledgment signals or any other modem tangible signals to either of the modems." The amendment is supported, *inter alia*, by lines 4-6 of the first paragraph of the SUMMARY OF THE INVENTION in the specification, and by the third full paragraph of page 3 in the specification.

Claim 42 was also amended to include "data and other signals", in order to maintain correct antecedent basis with claim 1.

Claims 42-43 are allowable at least by virtue of their parent, amended claim 1.

Claims 44 is allowable at least by virtue of its parent, amended claim 1.

New claim 45 depends from claim 8, and adds limitations on "displaying information on the modem connection". New claim 45 is supported, *inter alia*, by lines 3-5 of the last full paragraph of page 2 in the specification.

New claim 45 depends from claim 8, and is therefore deemed allowable.

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New claims 46 and 50 depend from claims 1 and 28 respectively, and add limitations on information content. New claims 46 and 48 are supported, *inter alia*, by Fig. 4D and the description thereof in the first full paragraph of page 12 of the specification.

New claims 47 and 49 depend from claims 1 and 28 respectively, and add limitations on information content. New claims 47 and 49 are supported, *inter alia*, by the second full paragraph of the Summary of the Invention.

New claims 48 and 51 depend from claims 1 and 28 respectively, and add a limitation on a state machine keeping track of the state of the modem connection. New claims 48 and 51 are supported, *inter alia*, by Fig. 3 and its description in the last full paragraph of page 7 of the specification.

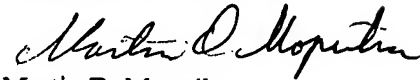
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In view of the above amendments and remarks it is respectfully submitted that claims 1-51 are now in condition for allowance. A prompt notice of allowance is respectfully and earnestly solicited. Failing allowance, Applicant feels that a telephone conference is important in continuing prosecution of the present application.

Respectfully submitted,



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Date: November 13, 2007

Enclosures:

- Petition for Extension of Time (Two Months)
- Request for Continued Examination